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ABSTRACT

A study investigated the effectiveness of teaching children how to take reading comprehension tests. Twenty-eight fifth grade students were pretested using the Gates-MacGinitie Reading Test, Survey D, Form I. The students were tested on speed and accuracy, vocabulary, and comprehension. Students were given 30 minutes of daily instruction and practice in test-taking techniques using the "Scoring High in Reading" series, and the "McCall-Crabbs Standard Test Lessons in Reading." At the end of four months the subjects were posttested, again with the Gates-MacGinitie Reading Test. The results showed a mean gain of 4.08, supporting the hypothesis that test wiseness will increase children's reading scores. (HTH)

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THE EFFECT OF TEACHING CHILDREN HOW TO TAKE TESTS ON READING COMPREHENSION

by

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Submitted in partial fulfillment of the requirements of the Master of Arts Degree in Reading Specialization

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May, 1984

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Abstract

This study investigated the effects of teaching children how to take tests on reading comprehension. Twenty-six fifth grade students were included in this study. The Gates-Macginitie Reading Tests, Survey D, Form I served as the pre and posttest. The materials used were Scoring High in Reading and McCall-Crabbs Standard Test Lessons in Reading, Book B. The experimental sample received one-half hour of instruction for four months. At the end of the instructional period, the Gates-Macginitie Test was administered. The data demonstrated that children's scores can be significantly raised through instruction in test-taking techniques. The results supported the hypothesis that test-wiseness will increase the children's reading scores.

The results of the Posttest indicated that the experimental sample made significant gains in reading comprehension as a result of test-wiseness that showed a mean gain of 4.08.

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THE EFFECT OF TEACHING CHILDREN HOW TO TAKE TESTS ON READING COMPREHENSION

There is a lot of emphasis placed on testing in today's society. Students are placed in Chapter I Programs for remedial reading and mathematic groups according to test scores. They are assigned to honors, standards, and basic secondary courses according to their test ratings. In order to obtain diplomas for graduation from secondary schools, one must produce a certain score on standardized tests. College entrance admissions to the most selective schools are based on high Scholastic Aptitude Test scores. Various careers in education and industry may depend on test performance. It appears that tests are here to remain and due to the large number of student's low performance on test scores, it is relevant for a study of this type to be done, particularly because in the author's school district, teachers feel that their good readers tend to score below classroom performance.

In McPhail's study (1976) Jason Millman and his assistants defined test-wiseness as a subject's capacity to utilize the characteristics and formats of the test and/or the test-taking situation to receive a high score. Test-wiseness is logically independent of the examinee's knowledge of the subject matter for which items are supposedly measures... it will be restricted to the actual taking of (not preparing for) objective achievement and aptitude tests.

According to Raspberry (1974) tests will always be with us therefore, we should insist on making the tests do what they are supposed to do. Everyone should be given a chance to pass them, by teaching students how to pass tests if necessary.

McPhail's study (1976) investigated test-wiseness in a sample of urban high school seniors using a Psycholinguistic approach. Several patterns of improvements in test-wiseness were found as a result of analyses in which merits further research.

The data from Callenbach's (1973) investigation demonstrates that the standardized reading test scores of second grade students can be significantly raised through instruction and practice in content-independent test-taking techniques.

Gordon (1982) feels students must be taught to read both the passages and the questions in order to improve reading scores.

Keetz's study (1978) suggests that verbal aptitude may be a factor which affects the degree of students' test-wiseness and may vary with the reading test that is administered. This study was a replication using the Davis Reading test, to determine if Preston's findings (1964) concerning tests were true for a sample of college freshmen of

average verbal aptitude. Preston found that a sample of university freshmen of high verbal aptitude did not need to read the passages on which the questions were written in order to choose the correct answer.

In McArthur and Hafner studies (1982), researchers attempted to reduced the majority and minority gap through teaching students strategies for taking tests. This study assessed whether a carefully targeted instructional sequence could influence the effects of bias. A reading comprehension test with items previously identified as biased for certain groups was administered to two samples of minority children. A few items improved significantly from pre-test to posttest, although this improvement diminished somewhat across time.

Statement of the Problem

Does instruction on test-taking skills have an effect on children's reading comprehension?

Hypothesis

Instruction on test-wiseness to one sample will pr0-duce no significant difference on reading comprehension test scores between the two matched samples.

Significance of the Problem.

It is of vital importance that schools, educators, and parents be aware that test-taking strategies for reading comprehension tests can be taught by classroom instruction and that teaching test-taking competence in the reading class must be scheduled. Since helping children reach a level of test sophistication commensurate with their level of reading efficiency is of importance in education, instructing students to read what one is being tested on is of most concern in enabling children to score high on standardized tests.

Definitions.

Reading Comprehension is defined by Sheldon (1962) as the ability to interpret what is read and requires a different pattern or arrangement of closely related factors or skills in each of the content fields.

Intelligence is the ability to learn and know, mind, and understand.

Standardized Tests are tests which have been given to a large and representative sampling of the population to which the test will be applied and it is characterized by the norms which enable comparisons.

Academic Achievement is defined as working up to one's ability.

Psycholinguistic is a branch of linguistics that deals with the mental states and processes in language and speech.

Assumptions

Test scores are valid and students performed to the best of their ability.

Limitations

The length of time for the study was four months. The setting was an urban school in New Jersey. Minority students were used as the sample.

Samples and Procedures

Twenty-eight fifth grade students at an inner city elementary school were included in this study. Twenty-five of the students were black and three were of Puerto Rican culture. The class was made up of fourteen boys and fourteen girls. The students were randomly assigned to either the experimental or control sample for this study. According to the California Test of Basic Skills given in May, 1983, the students ranged in reading ability from the fifth grade to the third grade level. Approximately ten students tested at fifth grade level, ten at fourth grade level, seven at the third grade level and one had a language barrier. Twelve students from the total sample received remedial instruction in reading from the Chapter I program.

The Gates-Macginite Reading Tests, Survey D, Form I were used as the pre and posttest for the class. The students were tested on speed and accuracy, vocabulary, and comprehension. This test was appropriate for use with the intermediate grades. The format and vocabulary may not have been in the student's experiential background.

The students in the experimental sample were given

thirty minutes daily instructions and practice in test-taking techniques using the Scoring High in Reading series. Workbook B was used which was appropriate for grade levels third through fifth. The workbooks were organized into the units commonly found on reading tests, such as word study, word knowledge, sentence meaning and reading comprehension. Each lesson stressed one reading skill and gave extensive practice in each section. Test practice was the last unit in each workbook in which students had to apply all the skills learned.

The various reading skills taught were identifying word meanings, synonyms, using context clues, main ideas, sequence of events, selecting a word or phrase that best completes a sentence, answering wh questions, reading for specific or general information and applying reading skills in a testing situation.

Instructions in test-taking skills emphasized the necessity of following directions, utilizing test format, reading follow-up questions before reading the paragraph, identify key words, scanning a passage for general information, marking responses correctly and managing time effectively.

Every lesson had three parts: Example, Practice and Test Yourself. Reading skills and test-taking skills were introduced in the example. Students were provided with instructions in the practice section. Students worked independently to develop proficiency in the "Test Yourself" part.

After each lesson, students corrected their papers and gave reasons for each answer choice. The group reviewed test-wiseness rules and skills. Ditto sheets were used on Scoring High in Reading Comprehension by Haynes.

In the practice sessions students were instructed to answer questions they were positive of and come back to the most difficult ones. The length of the test was posted, students were reminded of the remaining minutes until time was called. If students had extra minutes before time was called, proofreading of the lesson was encouraged.

Reasoning and guessing strategies were discussed. Students were encouraged to use the process of elimination, by narrowing their answers down to two choices. At the beginning of each lesson, students read directions silently as well as orally and discussed what was required of them.

The McCall-Crabbs Standard Test Lessons in Reading - Book B was also used. This book was appropriate for grades three through five. The students were urged to read the

questions before reading the passages. The reading selection consisted of multiple choice questions based on stated facts or general reasoning. Students corrected and kept a record of their progress. Students enjoyed these exercises and seem to develop confidence in their achievements.

The Control and Experimental sample followed the regular reading curriculum using their Macmillan R reading series. The Control Sample was given independent reading assignments whereas the experimental sample were given daily instructions on test-taking techniques. The results of the pre and post-tests of the Gates-MacGinitie Reading Tests given to both groups were compared at the end of the instruction period.

Results

Two students were eliminated from the Control and Experimental sample due to a language barrier and absenteeism. Both groups are shown to be equally divided with thirteen students in each group.

Statistical analysis was done on the pre-test data for the Experimental and Control groups. The results of the Experimental and Control sample are shown in table I.

Table I

(N=26)

Pretest of the Experimental and Control Sample

Group	Mean	SD	t
Pretest Experimental	23.08	6.70	5.56
Pretest Control	19.64	5.81	

significant .01

The Experimental sample seemed to be significantly different from the Control sample in this analysis. The Experimental sample consisted of students from the three reading levels

in the classroom and some of them received Chapter I remediation as well.

Table II compares the pre-test and Post-test results of the Experimental sample.

Table 2
N=26
Pretest and Posttest of the Experimental Sample

Group	Mean	SD	t
Pretest Experimental	23.08	6.70	10.59
Post-test Experimental	27.23	7.73	

significant .01

As shown in Table II, the mean differences were highly significant, suggesting that the experimental treatment, test-wiseness, had a considerable effect on the achievement of this sample.

Table 3
N=26
Gains of the Experimental and Control Sample

Group	Mean	SD	t
Control	.92	1.50	8.0
Experimental	4.08	1.80	

The gains of each sample were noted and statistically examined for significance. As can be seen in Table III, the Experimental sample shows a significant better mean gain than the Control group. The Experimental sample improved in reading comprehension as a result of the treatment and shows four points while the Control sample, initially better in achievement made less than a one point gain.

Conclusions

It was found that by giving instructions in test-taking techniques on reading comprehension, the students were able to perform better on tests. The experimental sample showed more educational gains than the control sample. The experimental sample showed an improvement in word meanings, using context clues, reading for details, main ideas and were able to apply reading skills in a testing situation. Results of instruction for the experimental group versus non-instruction for the control group displayed significant gains in test-taking techniques during the four month period of instructions.

This study supports research that students should be taught test-wiseness techniques to improve test scores. The data from this study demonstrated that the scores of fifth grade students can be significantly raised through the teaching of test-wiseness techniques. It would be advantageous to the students, the school as well as society to teach test-wiseness techniques.

Related Literature

Test-Wiseness

In an opinion poll conducted by National Education Association (1980) nine teachers in ten believe students in regular classes should be taught test-taking skills. The poll surveyed a representative sample of about 2,000 public school teachers in the United States. Due to the decline in scores on standardized tests the majority of teachers believe that lower scores result not from any decline in the quality of education but from the fact that the tests do not measure the learning that has taken place.

Raspberry (1974) feels that one of the disadvantages of standardized tests is "cultural bias"-that is, the tests either don't ask questions based on the knowledge that the minorities have acquired or they ask them in such a way that the minorities show less knowledge than they have.

Raspberry (1974) questions the validity of standardized tests and charges that many of the tests are inadequate measures of what they claim to measure, and that some of them notably the IQ type-may be definitely harmful in some of their usages. To Raspberry (1974), "The solution is not to throw out the tests but to insist on making the tests do what they allerge to do, and to give minorities the wherewithal to pass them- by teaching them how to pass tests, if necessary.

Gordon's study (1982) found that "students who perform poorly on standardized reading tests often approach test-taking with a fundamental misconception." Knowing they'll be tested on the meaning of passages, they read to "get it all" instead of reading to answer given questions." The students read the passages believing that the answers would be found directly in the text. Students must be able to read as well as to be able to reason. Gordon stresses that students must be taught to read both the passages and the questions. Test questions consists of two problems in which students can be taught to solve. The first problem is understanding the language of the test. The second problem consists of a student's lack of knowledge of how to recognize and use the information from the test item as a means of locating the answer. Students should be taught to think of questions as a puzzle to be solved. Students should be taught to locate key words in a question which will give them a clue in answering questions. This will help to build confidence and prevent children from becoming frustrated. As children's reasoning skills are developed, one's comprehension of test passages will increase. Terminology used on various tests should be defined. Students should have experiences in reading passages with questions that contain these words. Gordon feels this would not be teaching the test rather the vocabulary typical of item stems and

response options.

Erickson (1972) noted that following the administration of a standardized reading test, his colleages discovered that their "best readers" scored far below previously demonstrated efficiency. Various reasons were given for the low results but seldom was the factor of inadequate test sophistication given. Erickson stresses that poor test-taking skills should be an important consideration. It is a possibility that the low scores on standardized reading comprehension test were a result of a deficiency in test-taking ability.

Since standardized reading achievement instruments have become a necessary part of one's daily life and for program evaluation. Questions have been posed as How can reading teachers help their students reach a level of test sophistication commensurate with their level of reading efficiency? Or, should one teach for test-taking competence in the reading class? Students should be taught in reading class to identify the general skill being tested by each type of item found on standardized reading tests. They should be taught how to answer a central thought, main idea, detail, context, and inference questions. Erickson (1972) concludes that until reading-dependent measures are designed which will diminish the present inequities, test sophistication skills need to be taught as an integral part of one's

developmental, corrective, and remedial reading program.

Gerler and Costar's studies concentrated on the effectiveness of a program that teaches children achievement test-taking behavior. It seems practical to teach test-taking skills in the elementary school since discussions concerning the students are based on the results of standardized achievement tests. In this study fourth grade students were assigned randomly to seven neighborhood schools. There were two fourth grade classes in each school. Students in the experimental and control groups were drawn from the same socioeconomic population. The Metropolitan Achievement Test (1970) was used as the post and pretest to measure the results. In the experimental group, the "Scoring High in Reading program" was used. Emphasis in test-taking skills were placed on the following: group directions, using test formats, considering every answer choice, using sound clues to find the best answer, eliminating inappropriate answer choices, staying with the first answer, identifying key words and reasoning from facts or evidence. Workbooks were organized into sections that are similarly found on reading achievement tests, word study, word knowledge, sentence meaning and reading comprehension.

The control group followed the regular reading curriculum which did not include instruction on test-taking skills. Gerler and Costar (1980) states that although the difference was not significant, the experimental group did seem to gain at a faster rate than the control group on the reading subtest. Some interesting trends noted were more relaxed classroom atmosphere and reduced test anxiety in some of the experimental groups. The authors feel this program when combined with a traditional reading program during a ten month school year, also seems to help elementary students to concentrate on daily reading assignments.

Keetz's study was a replication using the Davis Reading Test to determine if Preston's findings (1964) concerning test-wiseness as measured by a passageless test based on the first thirty items of the Cooperative English Test: C2: Reading Comprehension (higher level), Form R (1950). He found that a sample of university freshmen of high verbal aptitude were able to recognize correct answers without reading the passages on which the questions were written. The moderate correlation reported in this study suggests that verbal aptitude may be a factor which affects the degree of student's test-wiseness and may vary with the reading test that is administered. Keetz feels further studies concerning the evidence of or the teaching of test-wiseness should

control such factors as verbal aptitude. Then educators will have a better understanding of test-wiseness when further studies are undertaken.

Brown's study (1982) cites because of the importance attached to standardized test results, children must be prepared to do their best. One part of this preparation involves developing test-wiseness or the ability to interpret test instructions, manage difficult test booklets and respond to questions in a manner that will make test results a more valid indicator of children's ability and achievement.

Brown's program consist of two components, time use and error avoidance to help elementary and middle school children to develop test-wiseness. The time use component of the program involves acquainting students with the test format, so that they can understand the directions. The error avoidance component would include important concepts that appear on tests and may be unfamiliar to children thus helping students develop an approach for answering questions that are similiar to those on the test. Being relaxed during test-taking and knowing appropriate study skills are two other areas that should be included in a comprehensive program aimed at increasing test-taking ability.

In Kalechstein's and Docter's study (1981) Ebel argued that standardized tests should assure that opportunities are

extended on the basis of aptitude rather than on ancestry, influence and social class. Research by Goslin (1981) indicaates that opportunities for gaining testing experiences are not equally available to all members of society. Similarly, Gaskin observes that testing tended to be a white middle-class phenomenon. Considerable research has also been devoted to the positive effects of practice and coaching on test score results (Anastasi, 1979) and of test-wiseness training. (Sarnacki, 1979) summarized previous studies on test-wiseness and that test-taking skills could be taught. He reported however that no studies showed success with inner-city children.

The Kalechstein's and Docter's study concluded that black students from a Chapter I school can benefit from instruction in test-taking skills. This study proves that test-wiseness is a cognitive skill that can be taught in the classroom. They further concluded that test results of culturally different students should be interpreted with caution. Considerations of the test-wiseness variables should be considered before conclusions are drawn.

Due to the increase in media imput, test results being published in newspapers. School officials should attempt to eliminate the variables of test-taking among students. The best way will be to make all students test-

wise. Gifford and Fluitt (1980) emphasize three variables that effects standardized test scores. The three variables were directions, test-taking speed and thinking clearly.

Many school systems recently have instituted programs of one king or another in recognition of the potential effect of test-taking skills on student performances. Public, independent and Catholic secondary school principals in the United States were sent questionaries to learn how many schools were teaching their students test-wiseness. One thousand, four hundred randomly selected schools were used in the survey. The findings of Gifford and Fluitt studies (1980) were that one-quarter of public secondary schools ran some sort of test-taking programs for their students. One-half of the independent schools did so, whereas one-third of the Catholic schools taught test-taking skills to their high school students. Approximately one-third of the independent schools have been teaching test-taking skills for ten years or more whereas the other schools in the survey have been conducting their program for less than three years.

Slakter, Koehler, and Hampton using high school seniors to teach test-wiseness by using programmed texts. One group used a programmed designed to teach students to answer

every item on an examination, whether or not the directions included a penalty for incorrect answers. The other group was given a programmed text to teach certain parts of test-wiseness. Each group served as the control group for the other. They found that the group that received the guessing program answered significantly more items than its control group, even though there was a penalty for incorrect answers. The group exposed to the test-wiseness program achieved significantly higher mean test-wiseness scores than its control group.

The results of Callenbach study (1973) showed that the standardized reading test scores of test-naive second grade students can be significantly raised through instruction and practice in content-independent test-taking techniques.

McPhail cites two reasons for teaching test wiseness: To improve the validity of test results. To provide equal education, employment and promotion opportunity for minorities. He feels that an important tool would be gain if students increased critical thinking skills simultaneously with test-wiseness training.

The data from Pfister's investigation (1977) demonstrated that the standardized reading test scores of third grade students can be significantly raised through

instruction and practice in content-independent test-taking techniques. The studies provided evidence that test-wiseness skills can be learned through the use of instruction and practice tests which follow the format of a standardized test. Therefore, it would appear advantageous to identify students who are deficient in test-wiseness skills and then to provide appropriate instructions for these prospective examinees. The objectives of this learning program would serve to decrease the handicap under which many examinees apparently operate. A variety of techniques including written instructional materials, programmed texts, verbal lectures and repeated testing have been developed to teach test-wiseness. Pfister concluded that the most effective method is instruction in general test-wiseness strategies along with practice in test-taking. Students were urged to answer all questions even if guessing was penalized. Research suggests that a student's score could be raise by reconsidering responses.

In HarcKham's opinion (1983) instruction in test-taking skills should focus on strategies in taking tests to help students achieve maximum performance on standardized tests. Harckham feels that it is not possible to score higher than one's actual achievement allows, but no obstacle should be

permitted to interfere with student's demonstration of their knowledge.

Crehan and his associates believe (Lange, 1981) test-taking strategies should be taught to all students particularly students that are weak in test-wiseness.

Jongsma and Warshauer (Lange 1981) found that low achievers and high achievers who received instruction on reading achievement tests received higher average scores than their counterparts in a control group. This was determined from studying the effects of test-wiseness on reading achievement test scores.

It appears that many students display low scores on achievement tests dued to a lack of test sophistication. From the information obtain from various research, there seems to be a great need for the teaching of test-wiseness skills. In citing an example given in Downey's (1977) study, a valedictorian from one of Washington's, D. C. public high school made one of the lowest scores on the Scholastic Aptitude Test. As a result of the low test scores, Guines, an associate superintendent decided to teach test-taking strategies to future students in order to give his students a better opportunity for scoring well. Research has given evidence that a test-

wise student will score higher than a student who has not had any instructions. The author feels this is especially true for minority or urban students who may know the materials in a classroom environment but perform poorly on a standardized test. To provide equal opportunity, test validity, employment, fairness, and equal education for all, it appears that test-wiseness instruction is effective in helping students who are low in test-wiseness to have the chance to score at their highest potentials.

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